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SHORT REPORT

Endovascular Treatment of an Iatrogenic Visceral Aortic Segment False Aneurysm Following a Translumbar Vertebral Biopsy

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Abstract Pseudoaneurysms of the visceral aorta are relatively uncommon. We report a case involving a 40 year old man who developed a pseudoaneurysm of his visceral aorta following a lumbar vertebral biopsy. This pseudoaneurysm was treated by a combination of coil embolisation and thrombin injection.

Introduction

Pseudoaneurysms involving the abdominal aorta are rare, however potentially fatal.[1] The most common etiological factors are trauma, plaque ulceration and iatrogenic injury which most commonly occurs at the time of spinal surgery.[2]

Report

Our case is of a 40 year old male of South Asian descent who has been living in North America for the past 30 years. Over the preceding ten years he had been suffering from chronic intermittent back pain. During his more recent work up, an MRI of his lumbosacral spine was performed which raised the question of possible tuberculous spondylitis.

On October 6th 2006 he underwent a CT guided biopsy of an abnormal area in his L1 vertebral body which proved inconclusive. Two weeks later he had an open biopsy performed under fluoroscopic guidance in the operating room. During the procedure a 6 Ch sheath was placed trans-lumbar in order to facilitate removal of the biopsy specimen. After

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several attempts at biopsy a large amount of bleeding was encountered and the procedure was abandoned. The bleeding was controlled with temporary packing and the wound was closed.

A CT Angiogram was performed the next day and revealed a large false aneurysm arising from the 5 o' clock position between the origin of the superior mesenteric and both renal arteries. This false aneurysm measured $2.4 \times 1.6 \times 2.2$ cm. The neck of the aneurysm was 8 mm from the origin of the superior mesenteric artery and 1 cm from the origin of the right renal. Fig. 1.

Several therapeutic options were considered. The neck of the false aneurysm measured 3 mm and it was decided to attempt to embolise the aneurysm using a combination of Thrombin injection and endovascular coils. The visceral aorta was accessed through bi-lateral femoral punctures. The coils were delivered to the target area using a tracker micro catheter delivery system. Six (10 mm $\times$ 14 cm) Nester platinum coils were placed in the false aneurysm sack followed by 1000 Units of thrombin. A check angiogram showed some filling of the aneurysm sack from an adjacent lumbar artery. This in turn was selectively cannulated and embolised with a single steel (3 mm $\times$ 10 cm) coil.

The patient was discharged home day five post procedure with no back pain.

A conventional angiogram performed 6 months post embolisation showed complete thrombosis of the false aneurysm sack. Fig 2.

Figure 2 Conventional angiogram performed six months post embolisation showing complete thrombosis of the pseudoaneurysm sack.

Discussion

We had initially attempted to inject the pseudoaneurysm sack with thrombin to initiate thrombosis as we had some concern placing embolization coils in a young patient, but due to the high flow within the sack a combination of coils and thrombin was needed.

Figure 1 Volume Rendering 3D reconstruction of visceral aorta showing $2.4 \times 1.6 \times 2.2$ cm pseudoaneurysm arising posteriorly between the origins of the superior mesenteric artery and both renals. The visceral aorta is displaced anteriorly.

On reviewing the literature we found several cases of iatrogenic visceral segment pseudo aneurysm however all had been treated via an open method.[3] This involved in most cases a thoracolaparotomy with retroperitoneal exposure of the aorta by means of medial visceral rotation a procedure which carries a significant risk of morbidity and mortality.

We have found several reports of lumbar artery embolisation following trauma however these injuries occurred some distance from the aortic wall.[4] To the best of our knowledge this is the first report of an iatrogenic visceral segment pseudo aneurysm treated by endovascular means. We feel our approach offers a novel alternative in an anatomically difficult area to access by standard open techniques for lesions with suitable anatomy.

Conflict of Interest

N/A.

Funding

N/A.

Ethical Approval

N/A.

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